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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**EX PARTE**

March 15, 1994

William F. Caton, Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W. - Room 222  
Washington, D.C. 20554

Re: CC Docket No. 94-1, Price Cap Review for Local  
Exchange Carriers

Dear Mr. Caton:

Please include the attached study, The Enduring Myth of  
the Local Bottleneck, in the record of the referenced  
proceeding. This study rebuts a report prepared for AT&T,  
MCI and CompTel by Economics and Technology, Inc./Hatfield  
Associates titled The Enduring Local Bottleneck: Monopoly  
Power and the Local Exchange Carriers which is already in  
the record in CC Docket No. 94-1.

I am filing two copies of this letter and its attachment  
in accordance with Section 1.1206(a) of the rules. Please  
contact me if you have any questions concerning this  
matter.

Sincerely,



Attachment

CC: Chairman Reed Hundt  
Commissioner Andrew Barrett  
Commissioner James Quello  
Robert Pepper  
Richard Metzger  
James Schlichting  
Greg Vogt

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**THE ENDURING MYTH OF THE LOCAL BOTTLENECK**

March 14, 1994

The AT&T/MCI Report misrepresents the role of CAPs yet a third time, by ignoring the huge capacities of CAP systems. Precise figures are unobtainable, but a reasonable estimate is that no more than 10 percent of CAP fiber capacity is actually being used to carry traffic. A CAP carrying 5 percent of access traffic from an urban business district could readily expand to 50 percent, at almost no increase in cost. Yet the AT&T/MCI Report says nothing about this at all. This is an astonishing omission in a report sponsored by AT&T -- a company that has frequently argued elsewhere that capacity is far more important than market share.

If the "99 percent pie chart" in the AT&T/MCI Report misunderstands the role of CAPs, it completely ignores the role of all other technologies that provide alternative means of access. The AT&T/MCI chart ignores the cellular market, which operates an independent set of exchanges and inter-exchange links, including many links direct to long-distance carriers. The pie chart likewise ignores private bypass facilities -- such things as the microwave antennas frequently mounted on top of office buildings. And it ignores all other public and private bypass technologies -- cable, private fiber, private coax, private satellite.

Finally, the Report engages in what can charitably be called original arithmetic. The most glaring illustration demonstrates how a "99 percent" figure can be pulled out of thin air. The AT&T/MCI Report purports to analyze the case of a cable company that wins 10 percent of a telco's subscribers. How much of the market does the local telco still have? The surprising answer: 99 percent!

This arithmetic miracle is explained as follows. Only 1 in 10 calls placed by a cable-telephone subscriber will be to a second cable-telephone subscriber; 9 out of 10 will terminate on some telco's network. So telcos (the AT&T/MCI Report argues) somehow still own 90 percent of originating calls, and 9 percent ( $0.1 \times 0.9$ ) of terminating calls.

To appreciate how the sleight of hand works, one need only point out how the same calculation comes out if the cableco is assumed to capture 70 percent of all subscribers. Using the methodology of the AT&T/MCI Report, the telco -- not the cableco -- will still "control" 51 percent of all calls. The device that transforms 30 percent into 51 percent, or 90 percent into 99 percent, is simple. Every call is counted twice -- once at the originating end, and once at the terminating end -- but only when the double-counting works to buttress the assertion that the local telco is a bottleneck.

### **The Economics Of Competitive Supply**

The AT&T/MCI Report labors to demonstrate that local competition will not develop because the basic economics just don't wash. Market experience has already established otherwise. In the real world, suppliers are rushing to provide the very services that the Report's theory concludes cannot exist.

Even if CAPs were the only competing providers of local exchange transport -- and they are not -- the 99% figure would be gravely misleading. Telephone economics are defined by the 10/90 rule: 10 percent of business customers generate 90 percent of the business revenue. A small fraction of business customers accounts for a much larger fraction of long-distance traffic. *The Geodesic Network* estimated in 1987 that 0.1 percent of all interexchange customers account for about 15 percent of interexchange traffic volume.

These large customers are typically concentrated in the downtowns of major cities. Long-distance carriers have to locate their own end offices somewhere, and they invariably locate them close to these tight clusters of high-volume users. Providing access to these high-volume users is therefore very cheap. It is reasonable to estimate that on a per-minute basis, the real cost of access for high-volume urban business users is between one-half and one-tenth of the cost of supplying access LATA-wide.

Any *revenue-based* analysis, like the one given such prominence in the AT&T/MCI Report, measures the product of traffic-volume and price. What ultimately matters for evaluating the bottleneck, however, is not revenues but traffic volumes. But the CAPs don't measure traffic volumes on their networks; nor do their customers. The relevant data simply do not exist. As the FCC itself has expressly found, usage-based tariffs cannot feasibly be applied to private lines connected with exchange access facilities.

The "99 percent pie chart" in the AT&T/MCI Report also is misleading because it ignores the effect of subsidies. Local telephone rates are averaged. Rural users pay the same as urban users. Toll services subsidize local ones. That makes much of the market unattractive to competitors, not because competition itself is infeasible or uneconomic, but because regulatory policy channels all competition to one end of the market rather than the other. By requiring the provider of last resort to serve (say) one-half of the market below cost, the regulator obviously steers all competition to the other half of the market. This will happen even if every sector of the market could be competitive, absent regulation.

Suppose, by way of analogy, that Safeway were designated the "Supermarket of Last Resort" and required to subsidize milk and bread from other receipts. This would not transform the supply of those two staples into a "natural monopoly." But it would channel all competition toward other goods. If one further postulates that sales of caviar and quiche generate 90 percent of all supermarket profits, the upshot is obvious. Safeway will have to increase the price of those two luxury items. Caviar-and-quiche competitors will proliferate. And consultants could be found to write lengthy papers explaining why the milk-and-bread market is a natural monopoly, and why Safeway should therefore be barred from selling anything else!

**Table 1. Competitive Access Providers -- Cities Served.**

<b>Company Name</b>	<b>Cities Served</b>
ACC Corporation	Rochester
Access Transmission Corporation	Richardson, TX
Advanced Telecom Management	Seattle
Associated Communications	Los Angeles
Atlantic Communications Enterprises	Atlantic City
Bay Area Teleport	San Francisco
Cablevision Lightpath, Inc.	Long Island
City Signal	Grand Rapids, Detroit, Memphis, Indianapolis, Las Vegas
City Utilities	Springfield, MO
ComTech Network Systems, Inc.	St. Louis
Cox Fibernet	Hampton Roads, VA
Digital Direct	Seattle, Dallas, Chicago, Sacramento, Pittsburgh
Eastern Telelogic (bought by Comcast)	Philadelphia; the counties: Montgomery, Philadelphia, Chester, Delaware
Electric Lightwave	Portland, Seattle, Salt Lake City (planned), Sacramento (planned)
F.A.S.T.	St. Louis
Fiber Optics Corp. of the U.S. (FOCUS)	Philadelphia
Fibernet, Inc.	Portland, Seattle, Louisiana
Fibrcom	San Antonio
Fitel	New York
FiveCom	Waltham, MA
Great Lakes Telecommunications	Detroit, MI
Hyperion Telecommunications	Jacksonville (under construction), Rural Vermont (under construction)
Institutional Communications Co. (I.C.C.) (owned by MFS)	Washington, D.C.
Indiana Digital Access, Inc.	Indianapolis, Terre Haute (under construction)
IntelCom	Denver, Cleveland, Dayton, Charlotte, Phoenix, Colorado Springs, San Francisco, Toledo, Akron, Cincinnati, Louisville, Los Angeles, Orange, and San Bernadino area. Targeted: Las Vegas, Albuquerque, Boulder, Salt Lake City, Nashville, Birmingham, Raleigh, Greensboro
Inter-Media Communications	Orlando, Tampa, Miami, Jacksonville, St. Petersburg, plans to expand throughout Southeastern U.S.
IOR Telecom (Iowa Resources)	Des Moines
Jones Lightwave	Atlanta, Miami, Chicago (under construction), Tampa (under construction), Alexandria, VA (under construction)
Kansas City Fibernet	Kansas City, Independence
Linkatel Communications, Inc.	Kansas City, San Diego (planned), Los Angeles (planned)
LOCATE	New York
MCI Metro	Top Metropolitan Areas Nationwide (under construction)

**CAPs.** -- The AT&T/MCI Report argues that CAPs are not "good candidates to provide exchange services competition to the general marketplace." This analysis is strikingly at odds with post-divestiture market experience. CAPs did not exist at all in 1982; by 1993, 46 separately managed CAPs were serving approximately 80 U.S. cities. Independent projections of CAP growth indicate a growth rate of 500 percent over the next five years; aggregate CAP revenues are projected to reach more than \$4 billion by 1998.

CAPs can capture a significant portion of local revenues, at a fraction of the cost that is needed to provide a ubiquitous network, by carefully targeting only the very highest users. The FCC's recent Interconnection Order will allow CAPs to add new customers before constructing new distribution rings out to their premises. CAPs will also benefit from the fact that they face less regulation than the local telcos. No one can seriously doubt the financial viability of CAPs either. Major cable companies like Jones Intercable, Adelphia Cable, Continental Cablevision, American Cablevision, Century Cable, Rochester Cable, and Time Warner have become large investors in CAP networks. Numerous other cable-CAP deals have been announced in the last few years.

It is indeed ironic to learn from an AT&T/MCI Report that CAPs have no future. In March 1990, MCI itself purchased a CAP, Western Union Advanced Transmission Systems (ATS). Western Union ATS has a presence in over 100 cities. MCI recently unveiled a plan to develop "MCI Metro," an alternative local transport network aimed first at large business customers in major metropolitan areas, and later at residential customers. MCI intends to launch operations in over 20 cities. It has committed \$20 billion toward the creation and delivery of new services for customers, and \$2 billion toward a local switching and fiber infrastructure. According to MCI's chairman and CEO Bert Roberts, MCI intends to "attack the RBOCs' local markets through our MCI Metro company."

**Cable.** -- The AT&T/MCI Report confidently states that "[n]o cable system offers local telephone service today." This is not so. U.S. cable companies, often working in collaboration with U.S. local telcos, are already offering a great deal of cable telephone service in the United Kingdom. Indeed, U.K. telcos are now losing an estimated 15,000 subscribers a month to cable telephony. Cable companies already provide telephone service to 15 percent of the U.K. homes they pass, and to 70 percent of the homes that subscribe to cable.

There is an even greater potential market for cable telephone service in the United States. Cable passes far more homes, and far more homes here subscribe to cable. If cable companies in the United States experienced comparable growth of cable telephone service, they would soon have some 45 percent of the U.S. local exchange telephone market. The largest obstacles to the development of cable telephone service in the United States are not economic -- they come from regulation.

**Map 3. Locations Served by  
Competitive Access Providers (CAPs)**

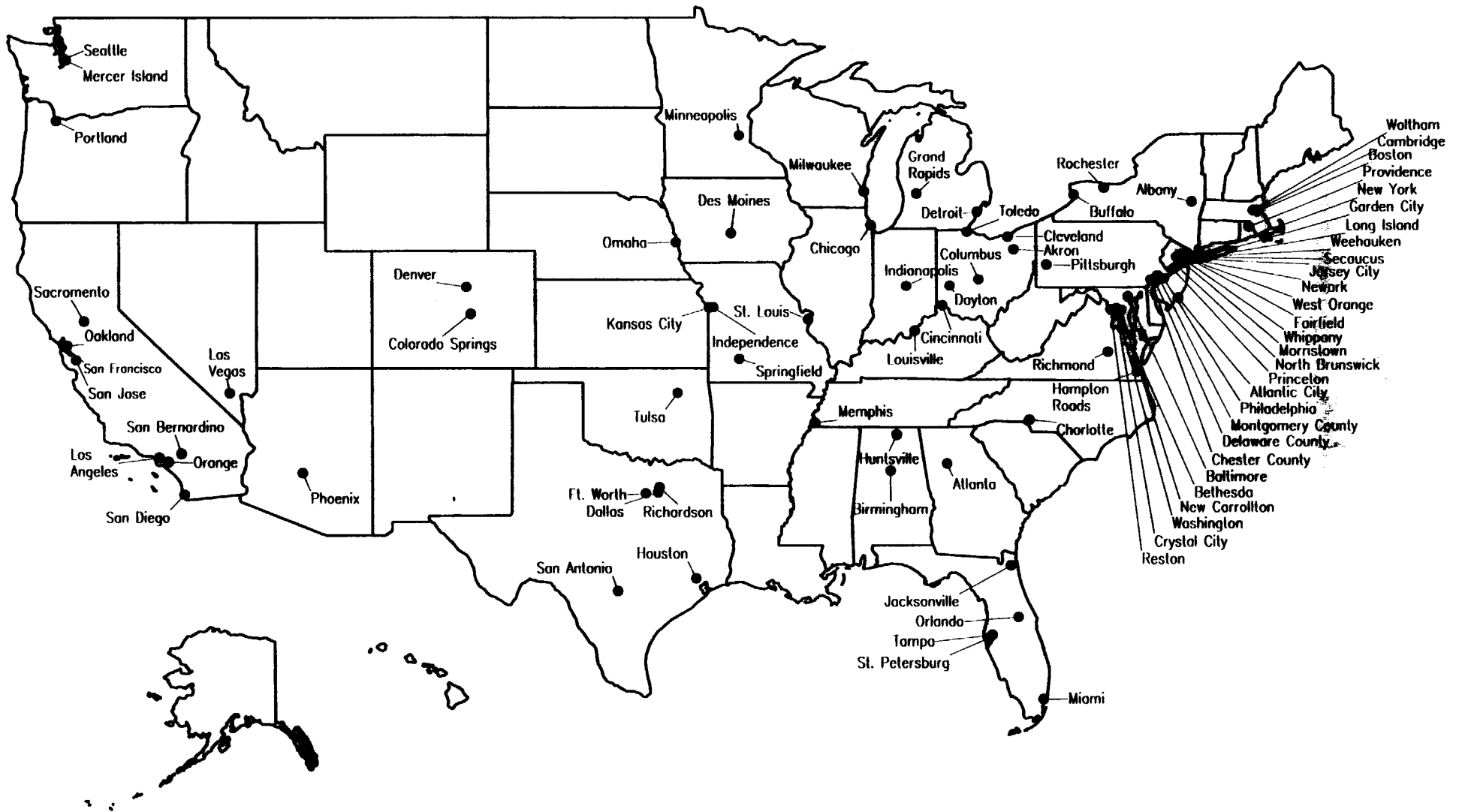


Table 1. Competitive Access Providers -- Cities Served.

Company Name	Cities Served
Metrex Corp. of Atlanta (owned by MFS)	Atlanta
Metrex	Birmingham, Huntsville
Metro Com	Columbus, Cleveland (under construction), Akron (under construction)
Metropolitan Fiber Systems (not including I.C.C. or Metrex Corp. of Atlanta)	Atlanta (under construction), Baltimore, Boston, Cambridge, Chicago, Dallas, Houston, Los Angeles, Minneapolis, New York City, Pittsburgh, Philadelphia, San Francisco, Rochester, Buffalo, Albany, Tampa, San Jose, St. Louis, Des Moines, Omaha, Wilmington (under construction), Northern New Jersey, Crystal City, VA; New Carrollton, MD; Reston, VA; Washington, D.C.
MH Lightnet	Northern New Jersey
PacNet	Seattle, Mercer Island, WA
Phoenix Fiberlink	Sacramento (under construction)
Phonoscope	Dallas/Ft. Worth, Houston
PrivateNet	Washington D.C., Bethesda, MD
Public Service of Oklahoma MetroLink	Tulsa
Shared Technology	New England Region
Teleport Communications Group	Baltimore, Boston, Cambridge, Chicago, Dallas, Garden City-Long Island, Houston, Jersey City, Los Angeles, Newark, New York City (five burroughs), North Brunswick, NY-NJ Corridor, Princeton, San Francisco, Detroit, Miami, Phoenix, Providence, St. Louis, Seattle, Milwaukee, San Diego, Omaha, Oakland, Weehauken, NJ
US Fibercom Network, Inc.	New York
Virginia Metrotel	Richmond, VA
Western Union ATS, Inc.	Operates as a CAP in Chicago; owns rights of way and conduit in 106 cities

Sources: DONALDSON, LUFKIN & JENRETTE, LOCAL TELEPHONE COMPETITION INTENSIFIES AS STRATEGIC COMPETITORS CONVERGE at 24, 25 (May 18, 1992); *Continental Cablevision in Joint Venture To Offer Local Access Services on Fiber System*, TELECOMMUNICATIONS REPORTS, May 18, 1992, at 37; *Jones Chicago Lightwave Plans System*, TELECOMMUNICATIONS REPORTS, Dec. 23, 1991, at 15; *1991 Alternate Local Transport ... A Total Industry Report*, CONNECTICUT RESEARCH REPORT at 60-146 (Feb. 1991); COMMUNICATIONS DAILY, May 11, 1992, at 4; The Yankee Group, CAP MARKET UPDATE: YEAR OF TRANSITION at 7 (Feb. 1992); K. Scott, *Firm Forms Bypass Net Subsidiary*, NETWORK WORLD, Dec. 28, 1987/Jan. 4, 1988, at 1; Kevin Bell, *New Orleans Council Considers First Fiber-Optic Programs: Companies Offer Presentations*, TIMES-PICAYUNE, Dec. 18, 1993; David Wichner, *US West Workers Shocked by Layoffs*, PHOENIX GAZETTE, Sept. 18, 1993, at A1; FCC REPORT, Dec. 15, 1993; Annie Lindstrom, *Local Loopwaves*, COMMUNICATIONS WEEK, July 5, 1993; Arthur Barber, *Nothing to Get Wired About*, FORTUNE, May 17, 1993; Michael Fahey, *TCG to Build Fiber Nets*, NETWORK WORLD, Sept. 6, 1993, at 42; Mike Boyer, *Warner firm hooks into phones*; CINCINNATI ENQUIRER, Dec. 16, 1993, at A1; Bill Burch, *MCI makes \$ 2b local call; Carrier forms unit to take on Bells; could lower users' long-haul bills*, NETWORK WORLD, Jan. 10, 1994, at 1; NETWORK WORLD, Dec. 20, 1993, at 20; *News Briefs; Cable on Trial*, COMMUNICATIONS WEEK, Dec. 6, 1993, at 3A; COMMUNICATIONS DAILY, Dec. 1, 1993, at 4; COMMUNICATIONS DAILY, Nov. 18, 1993; PR NEWswire, Nov. 16, 1993; *New Yorkers Comparison Shop*, COMMUNICATIONSWEEK, Oct. 25, 1993, at 33; COMMUNICATIONS DAILY, Oct. 15, 1993 at 7; *Alcatel Gives the Signal*, COMMUNICATIONSWEEK, Sept. 27, 1993, at PNU3; *FCC Reviews Precedent-Setting NYNEX Discount Plan For VT*, COMMUNICATIONS DAILY, Sept. 13, 1993 at 4; NETWORK WORLD, Sept. 6, 1993; TELEPHONY, Aug. 16, 1993; Annie Lindstrom, *Looming Local-Loop Battle is Good News for Users*, COMMUNICATIONSWEEK, Apr. 19, 1993, at 59; *In Brief; MFS to Build Another Net*, COMMUNICATIONSWEEK, Jan. 10, at 30; S.P. CONRAD, C.J. LAWRENCE INC., CO. REP. NO. 1385971, INTELCOM GROUP (Nov. 8, 1993); COMMUNICATIONS DAILY, May 12, 1993, at 9; NETWORK WORLD, Mar. 8, 1993, at 37; COMMUNICATIONS DAILY, Dec. 8, 1992, at 5; *MCI To Market New Nationwide Access Service, Offers Business Greater Network Diversity*, PR NEWswire, May 26, 1993; Daniel Briere & Christopher Finn, *1993 Alternative/Bypass Carriers Buyer's Guide*, NETWORK WORLD, Sept. 6, 1993, at 37; Michael Cooney, *Firms Offer Backbone Feeder Wares*, NETWORK WORLD, Jan. 24, 1994, at 16.

What is really going on here? Every call is counted twice -- once at the originating end, and once at the terminating end -- but only when the double-counting works to reinforce the assertion that the local telco owns the world.

Even putting aside trickery of this sort, these calculations miss almost everything that is important. Telephones are used to make long-distance calls too -- about one in six calls for residential subscribers,<sup>51</sup> and one in three for businesses. A cable company providing phone service to 10 percent of the more than 12 million households in the Los Angeles LATA would assuredly make a direct connection to a long-distance carrier eliminating that traffic entirely from the local telco's network. There are 14 million cellular telephones in the country, and cable telephone subscribers could connect to and from them as well through non-telco facilities. Direct links are likewise readily possible to the packet switched networks that lead to the national information providers.

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<sup>51</sup>FCC, STATISTICS OF COMMUNICATIONS COMMON CARRIERS 1992/1993, at 22 (Jan. 1994).

## II. THE ECONOMICS OF COMPETITIVE SUPPLY

The AT&T/MCI Report labors to demonstrate that local competition will not develop because the basic economics just don't wash.<sup>52</sup> The cost of providing competitive service is prohibitively high, the Report argues.<sup>53</sup> Consumers do not particularly want alternatives, and will shun new technology. From both sides -- supply and demand -- cable, wireless and competing fiber networks are not competitively viable, at least not in the foreseeable future.

Market experience has already established otherwise. In the real world, suppliers are rushing to provide the very services that the Report's theory concludes cannot exist. In all solemnity, the AT&T/MCI Report strives to prove that what is happening in practice is simply not possible in theory.

### CAPs

The Report does not discuss CAPs in its "business case" scenario nor does it treat them in the examination of customer demand. Nevertheless, the Report argues that CAPs are not "good candidates to provide exchange services competition to the general marketplace."<sup>54</sup> CAP fiber rings, the reasoning runs, are generally located in only business areas and "typically do not pass large numbers of residences or small businesses."<sup>55</sup> The Report further contends that "individual CAPs and Alternative Local Service Providers [have] not [been] granted required certification in most states."<sup>56</sup>

This analysis is strikingly at odds with post-divestiture market experience. CAPs did not exist at all in 1982; they served only five cities by 1987. In the past few years, CAPs have grown phenomenally across the country. Today, there are 45 separately managed CAPs serving approximately 80 U.S. cities. MAP 3. CAPs are now operating in so many cities and suburbs that it is difficult to keep a complete count. These include all of the top 25 metropolitan statistical areas. TABLE 1. The U.S. cities and regions served by CAPs contain the headquarters of more than 60 percent of the companies that appear on the *Communications Week* list of the top

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<sup>52</sup>AT&T/MCI REPORT at i.

<sup>53</sup>*Id.* at i, ii.

<sup>54</sup>*Id.* at 85.

<sup>55</sup>*Id.* at 85.

<sup>56</sup>*Id.* at viii.

4 million American homes are also equipped with receive-only satellite dishes.<sup>39</sup> These dishes were wholly deregulated by the FCC in 1979.<sup>40</sup> Virtually all cable programmers own and operate their own satellite ground equipment.<sup>41</sup> Many have their own uplink facilities too. None of these facilities depend on local telephone networks.

Most electronic information services do not move through the telephone network either; they are provided through non-telco media, including stand-alone equipment, cable and wireless facilities. On-line electronic publishing faces the most direct competition from over-the-air broadcasting and print media. Similarly, consumers already enjoy access to information resources like directories, encyclopedias or credit-card databases -- that are distributed over many different media.<sup>42</sup> For larger business users, Very Small Aperture Terminals (VSATs) have proved to be cheaper<sup>43</sup> and more capable than voice-grade leased telephone lines;<sup>44</sup> costs decline as the number of receiving points increases.<sup>45</sup> The use of VSATs has grown rapidly in recent years as satellite systems continue to be used in significant

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<sup>39</sup>Dennis Wharton, *Debuting Cable/Sat Net Turned to the Right*, DAILY VARIETY, Nov. 29, 1993, at 4.

<sup>40</sup>*In re Regulation of Domestic Receive-only Satellite Earth Stations*, 74 F.C.C.2d 205, 217 (1979).

<sup>41</sup>*In re Domestic Fixed-Satellite Transponder Sales*, 90 F.C.C.2d 1238, 1249-1250 (1982).

<sup>42</sup>The distribution of a Supreme Court opinion offers an illustrative example. Many people, for many varied reasons, read the opinions of the United States Supreme Court. They can choose any number of distribution alternatives. Some will call the Supreme Court's audiotex "opinion line" (202-479-3360). Still others will wait for the opinion to come on line in videotex, either from the Supreme Court itself (a recent innovation) or through secondary distributors like Lexis or Westlaw. Others will get their updates through U.S. Law Week. Still others will wait for West's paperback *Supreme Court Reports*, which will appear about a month after a decision is released. Others will wait for the interim bound West volumes, nine months to a year later. Few economists would accept, however, that there are as many different markets for Supreme Court opinions as there are channels for distributing them. For consumers, this market, like virtually all others, is defined by the content, not the medium.

<sup>43</sup>The cost of a VSAT site is approximately \$400 per month -- or about the same price as telephone-line modems operating at one-sixth the speed. COMMUNICATIONS DAILY, Apr. 22, 1993, at 12. See also Roberts, *Help is Only a Signal Away*, SATELLITE COMMUNICATIONS, May 1990.

<sup>44</sup>Patrick Flanagan, *VSAT: A Market and Technology Overview; Very Small Aperture Terminal Satellite Antenna*, TELECOMMUNICATIONS, Mar. 1993, at 19. Multi-rate bandwidth is making VSAT more versatile for data transfer and video. *Ibid.*

<sup>45</sup>DEP'T OF COMMERCE, U.S. INDUSTRIAL OUTLOOK 1994, at 29-17 (1994). Industry estimates approximately U.S. VSAT contracts in 1993 as being worth about \$720 million. *Id.* at 30-20.

quantities.<sup>46</sup> From 1992-1993, revenues for the VSAT market grew 25 percent;<sup>47</sup> in 1993 approximately 270 VSAT networks were installed.<sup>48</sup>

### **Arithmetic Trickery**

At times, the AT&T/MCI Report resorts to what can only be called outright trickery. Here is the most glaring illustration, one that again demonstrates how a "99 percent" figure can be pulled out of thin air, in complete defiance of reality.

In several pages of dense analysis, the AT&T/MCI Report purports to analyze the case of a cable company that wins 10 percent of a telco's subscribers.<sup>49</sup> How much of the market does the local telco still have? The surprising answer in the AT&T/MCI Report: no less than 99 percent!<sup>50</sup>

How is that possible? Well, only 1 in 10 calls placed by a cable-telephone subscriber will be to a second cable-telephone subscriber; 9 out 10 will terminate on the telco's network. So the telco (the AT&T/MCI Report argues) somehow still owns 90 percent of originating calls, and 9 percent ( $0.1 \times 0.9$ ) of terminating calls. Voila! A 10 percent loss of subscribership -- only a 1 percent loss of whatever it is that really counts.

But why not push the analysis further? Suppose the cable company captured exactly half of all subscribers. According to the calculation used in the AT&T/MCI Report, the telco would still "control" 75 percent of all calls -- all telco originated calls, and the one half of cableco-originated calls that terminate on the telco's network.

So why not go further still? By this kind of arithmetic, the cableco could have 70 percent of the market, and yet still be at the mercy of the telco, because 51 percent of calls would still either originate (30 percent) or terminate (21 percent) on the telco's network. It takes a certain skill to calculate bottleneck power in such a way as to make 30 percent bigger than 70 percent, but the authors of the AT&T/MCI Report are up to the challenge.

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<sup>46</sup>Satellite's chief advantage remains its very large footprint -- its power to transmit very efficiently from one point to many. There are more than 100 commercial communications satellites already in orbit. Barnaby J. Feder, *Searching for Profits in Space*, N.Y. TIMES, Feb. 11, 1990, at 10.

<sup>47</sup>U.S. INDUSTRIAL OUTLOOK 1994, at 29-17.

<sup>48</sup>*Ibid.*

<sup>49</sup>AT&T/MCI REPORT at 135-152.

<sup>50</sup>*Id.* at 37.

facilities alone, McCaw's interstate network already crosses LATAs in at least 18 instances, and states in at least 9. MAP 2.

We do not know how much larger McCaw's interstate network may be when landline links are factored into the picture. Those links are probably the most important of all for McCaw, but they are also the most difficult to identify from public records. McCaw is almost certainly leasing wireline trunks from AT&T or other interexchange carriers to link together its clusters across the country. These trunks would handle automatic call delivery, and, perhaps, also ordinary wireless long-distance calling when it originates on a wireless phone in one McCaw service area and terminates on the landline network in a second.

*Private Bypass, Data, and Video.* -- The AT&T/MCI Report completely ignores private bypass facilities too -- such things as the microwave antennas frequently mounted on top of office buildings in urban areas.

As discussed below, the AT&T/MCI Report attempts to prove that competition has been slow to evolve in the long-distance market by choosing as a kick-off date the FCC's 1959 decision to license private microwave. But it then completely ignores the role private microwave has played as a bypass technology in the local exchange. Though use of microwave facilities has decreased sharply in the interexchange market, sales to local exchange users have held the market fairly steady.<sup>36</sup> These facilities last for many years; a steady pace of sales<sup>37</sup> may thus indicate a growing volume of usage.

All other public and private bypass technologies -- cable, private fiber, private coaxial and private satellite are also ignored by the AT&T/MCI Report.

In some markets, these omissions include almost everything. For many non-voice telecommunications services, telcos do not control 99 percent of access, they control close to 0 percent. A trusting reader of the AT&T/MCI Report might conclude that most video services are transported through the local exchange over telco networks even though cable and satellite are in fact overwhelmingly favored. The 1978 Pole Attachment Act guaranteed cable operators access to the poles and conduits of local telcos; independent, non-telco cable networks now pass 98 percent of television-equipped American homes.<sup>38</sup> Other distribution media that provide last-mile delivery of video to the consumer, such as over-the-air television or videocassettes, operate equally independently of the local telephone network. Around

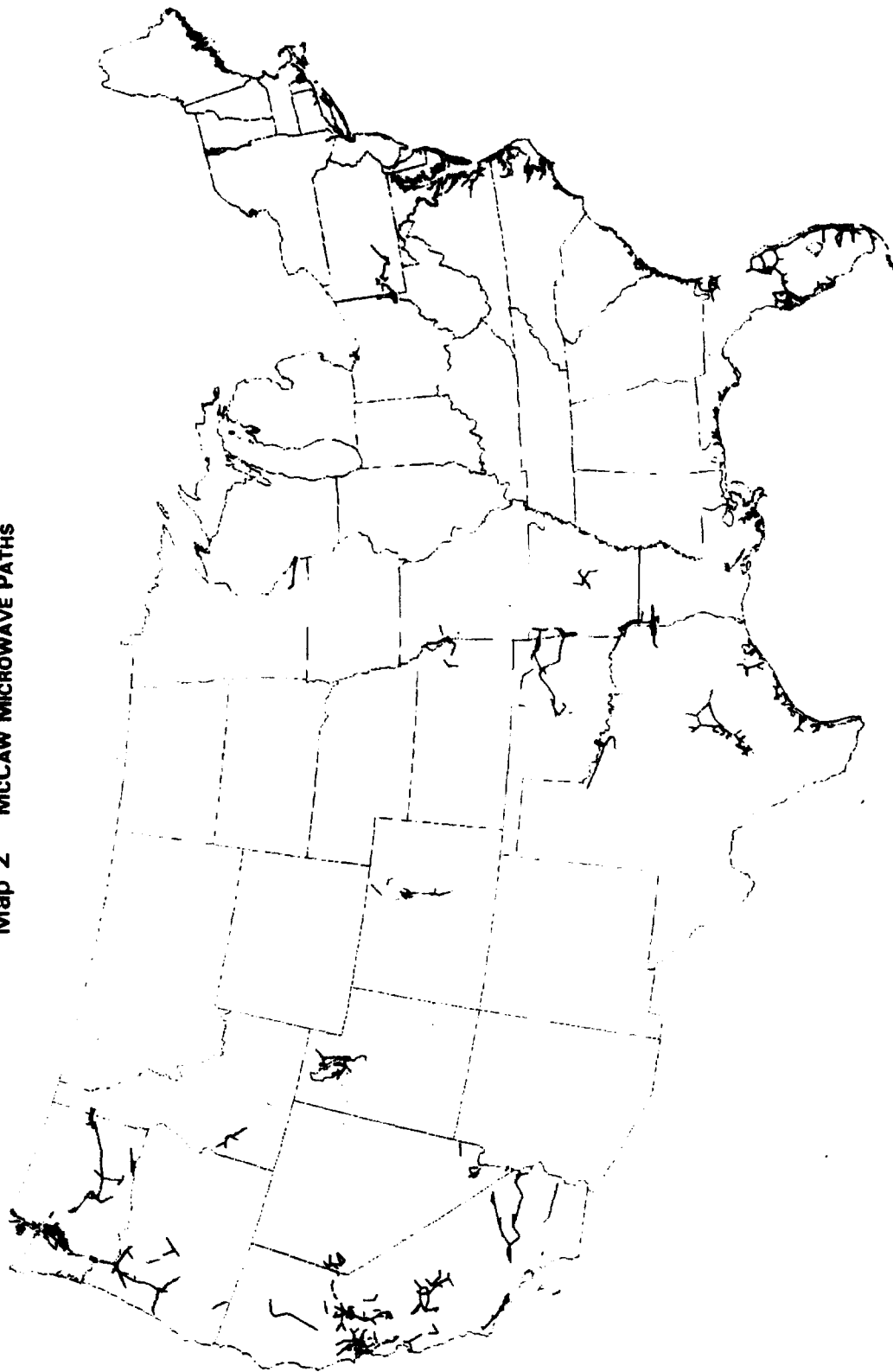
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<sup>36</sup>NBI, U.S. TRANSMISSION EQUIPMENT MARKET 1992/93, at 38 (1993).

<sup>37</sup>*Id.* at 36. The forecast period for this prediction is through 1997.

<sup>38</sup>NCTA, CABLE TELEVISION DEVELOPMENTS 1-A (Nov. 1993).

Map 2 McCaw Microwave Paths



September, 1989

— INTRASTATE  
— INTERSTATE

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vulnerable to competition in a variety of service offerings.<sup>27</sup> Despite MCI and Sprint's puny market shares, AT&T argued at length, the vast excess *capacities* of their networks was what really counted.<sup>28</sup>

*Cellular.* -- If the AT&T/MCI Report misapprehends the role of CAPs, it simply ignores the role of all other technologies that provide alternative means of access.

Cellular carriers operate local exchanges in their own right. In 1982, the Department of Justice estimated that an interexchange carrier would build access facilities to pick up the interLATA business of 5,000 or more customers.<sup>29</sup> Today, even the smallest cellular systems have well in excess of 5,000 subscribers. Thus, according to the economic theory accepted at divestiture, it is economically attractive for interexchange carriers to connect directly to cellular switches, bypassing the local network entirely. Once again, there are no precise data available. The agents of bypass here -- companies like AT&T and McCaw -- simply are not telling anyone else exactly what they are doing. But bypass is clearly feasible, and is almost certainly occurring.

At least one indication of what is possible here is the "seamless" network being built by McCaw. Before AT&T arrived as a suitor, McCaw had repeatedly promised its customers that it would knit together its cellular network, cell by cell, switch by switch, region by region, until it served the whole country -- in precisely the way that long-distance service was developed around landline exchanges early in this century.<sup>30</sup> McCaw has announced plans for a "North American Cellular Network

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<sup>27</sup>Blake, Flynn and Jennings, *A Study of AT&T's Competitors' Capacity to Absorb Rapid Demand Growth* App. A at 35-38, *attached to* AT&T Comments, *Competition in the Interstate Interexchange Marketplace*, No. 90-132 (F.C.C. July 3, 1990).

<sup>28</sup>AT&T's 1990 report concluded that "if MCI and US Sprint were limited to absorbing demand from particular categories of AT&T switched services, they could capture the entire demand for those AT&T services." *Id.* at App. A at 35. Moreover, "[p]lenty of capacity would remain for them to absorb their normal growth of approximately 30% per year." *Id.* at App. A at 36.

<sup>29</sup>Response of the United States to Comments Received on the BOC LATA Proposals at 16-17, *United States v. Western Elec. Co.*, No. 82-0192 (D.D.C. Mar. 23, 1982). The Department based its assumption on the belief that an interexchange carrier would need to capture only a 5 percent market share to compete, and that interexchange carriers would find it economical to establish facilities to serve 5,000 or more subscribers. *Ibid.* Judge Greene subsequently criticized the 5 percent assumption, but nonetheless approved almost all of the Department's recommendations. *United States v. Western Elec. Co.*, 569 F. Supp. 990, 1020 n.150 (D.D.C. 1983).

<sup>30</sup>McCaw's 1987 annual report identified "[t]he development of regional clusters" as a crucial element of its operating strategy. MCCAW CELLULAR COMMUNICATIONS, INC., 1987 ANNUAL REPORT 3 (1988). Two years later the company reported: "Within its clusters, McCaw Cellular has pursued an aggressive acquisition strategy designed to \* \* \* continuously enlarge the service area provided by obtaining majority or controlling interests in successively adjacent markets \* \* \*." MCCAW CELLULAR COMMUNICATIONS, INC., 1989 ANNUAL REPORT 4 (1990). In 1990 McCaw committed itself to "the near-

(NACN)" to "link[] together separate cellular coverage areas so that, to the customer, all of the coverage areas seem to be one gigantic cellular system."<sup>31</sup> McCaw's assembly of a long-distance network has already been implemented at the state and regional levels. The company has built large regional clusters in the country's most active markets.<sup>32</sup>

McCaw's strategy is typical. According to one recent analysis, "[a] substantial majority (70 percent) of the non-BOC cellular systems surveyed used some form of direct access [to long-distance carriers] \* \* \* most non-BOC cellular carriers route some or all long-distance traffic directly to long-distance carriers, avoiding the costs of LEC switched access."<sup>33</sup> Whenever traffic on a cellular system exceeds 20,000 minutes of use per month, direct connections from cellular switches to long-distance carriers are economical.<sup>34</sup>

With its own state-wide and regional networks in place, McCaw has shifted its attention to national networking. The company already claims that it is "the only company building a nationwide communications network."<sup>35</sup> Precisely what facilities McCaw is linking together to form regional clusters and provide long-distance service to its customers is known only to McCaw and presumably, now AT&T. In some instances, McCaw uses microwave to link cell sites to mobile switches. The company also uses longer microwave shots to link clusters and switches. Map 2 plots all of the microwave licenses that McCaw now holds. We estimate that using microwave

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term creation of a seamless, high-quality personal communications network spanning the North American continent." *McCaw Cellular/LIN Broadcasting to Rebuild Cellular Telephone Systems in N.Y., N.J., Pacific Northwest*, BUSINESS WIRE, Oct. 3, 1990. In 1992 McCaw declared its intent to "[c]apture long-distance economi[es]," to "[m]aintain[] [its] long distance intra/interLATA revenue advantage," and to "[e]stablish network systems \* \* \* [to] [s]upport major multi-market and government accounts with a 'national network.'" McCaw Cellular Communications, Inc., McCaw's Goals and Values 8-9 (Jan. 1991).

<sup>31</sup>McCaw Cellular Communications, Inc., 1992 ANNUAL REPORT 2 (1993).

<sup>32</sup>See, e.g., K.M. LEON ET AL., BEAR, STEARNS & CO., INC., COMPANY REPORT NO. 1157367, MCCAW CELLULAR (Dec. 27, 1991).

<sup>33</sup>Affidavit of Charles L. Jackson, at ¶ 32 *attached to Reply of the Bell Companies in Support of Their Motion for Removal of Mobile and Other Wireless Services from the Scope of the Interexchange Restriction and Equal Access Requirement of Section II of the Decree*, No. 009520 (DOJ Aug. 3, 1992).

<sup>34</sup>"It is clear that virtually all US cellular carriers should have sufficient originating interLATA traffic volumes to make special access or facilities bypass the most economic way to deliver traffic to a long-distance carrier. It makes little or no economic sense for most cellular operators to deliver long-distance traffic through the public switched network if they have the alternative of routing it directly to a long-distance carrier." *Id.* at ¶¶ 22-30.

<sup>35</sup>McCaw Sales Brochure & Coverage Map for Wichita, KS 1 (1990).

volume.<sup>23</sup> Elsewhere, Ameritech has estimated that 0.4 percent of its business customers provide 40 percent of its operating companies' revenues.<sup>24</sup> Out of the 186 central offices which BellSouth operates in Georgia, seven (located in the Atlanta area) account for 30 percent of total business revenues. Pacific Bell has estimated that more than 85 percent of its revenues are concentrated in less than 6 percent of the land area it serves, and that 1 percent of its business customers account for nearly 45 percent of its intraLATA toll revenues. Similarly, Bell Atlantic has estimated that 3.3 percent of its intraLATA toll customers accounts for nearly 35 percent of its revenue and 6.4 percent accounts for over half.

These figures reflect a basic fact of telephony: large numbers of high-revenue customers are typically clustered close together in urban business areas. Long-distance carriers have to locate their end offices somewhere, and they of course locate them right smack in the middle of their highest-revenue-generating customers. *Providing access to these high-volume users is therefore very cheap.* Precisely how cheap is impossible to say. But it is reasonable to estimate that on a per-minute basis, the real cost of access for high-volume urban business users is between one half and one tenth the cost of serving users LATA-wide.

This fact is not merely ignored, it is deliberately obscured in any *revenue*-based analysis, like the pie-chart given such prominence in the AT&T/MCI Report. By the logic of the AT&T/MCI report, if CAPs served 50 percent of all local consumers at one-fifth the price charged by local telcos, telcos would *still* "control" 80 percent of the market -- because telcos would still earn over 80 percent of total revenues. Cheaper connections will tend to carry *more* traffic, but may well generate *less* revenue.

What ultimately matters for evaluating the bottleneck is not total revenues but total traffic volumes. And those totals are simply not known. The CAPs do not measure traffic volumes on their networks; nor do their customers. No such figures are reported to the FCC. The relevant data simply do not exist. As the FCC has expressly found, usage-based tariffs cannot feasibly be applied to private lines connected with exchange access facilities.<sup>25</sup>

*Price Averaging.* -- The "99 percent pie chart" in the AT&T/MCI Report is also misleading because it ignores the subsidized side of the network. Local telephone

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<sup>23</sup>PETER HUBER, THE GEODESIC NETWORK: 1987 REPORT ON COMPETITION IN THE TELEPHONE INDUSTRY 3.9, Table IX.5 (1987).

<sup>24</sup>Ameritech's Reply to the Response Comments on the Report and Recommendations of the United States Concerning the Line of Business Restrictions at 28 n. 38, *United States v. Western Elec. Co.*, No. 82-0192 (D.D.C. May 22, 1987).

<sup>25</sup>Amendment of Part 69 of the Commission's Rules Relating to Private Networks and Private Line Users of the Local Exchange, 2 F.C.C. Rcd 7441, 7448 (1987).

rates are averaged. Rural users pay the same as urban users. Toll services subsidize local services. Overall, the same upper crust of users -- the top 30 or 40 percent of heaviest users, though the exact figure is again uncertain -- subsidize the other 60 or 70 percent. Right from the outset, that means that much of the market is unattractive to competitors -- not because competition itself is infeasible, or even uneconomic, but because regulatory policy is designed to make it so. In pursuit of other goals, regulators deliberately channel competition to one end of the market rather than the other. By requiring the provider of last resort to serve (say) one-half of the market below cost, the regulator obviously steers all competition toward the high end of the other half of the market. This will happen even if every sector of the market was actually or potentially competitive absent regulatory intervention.

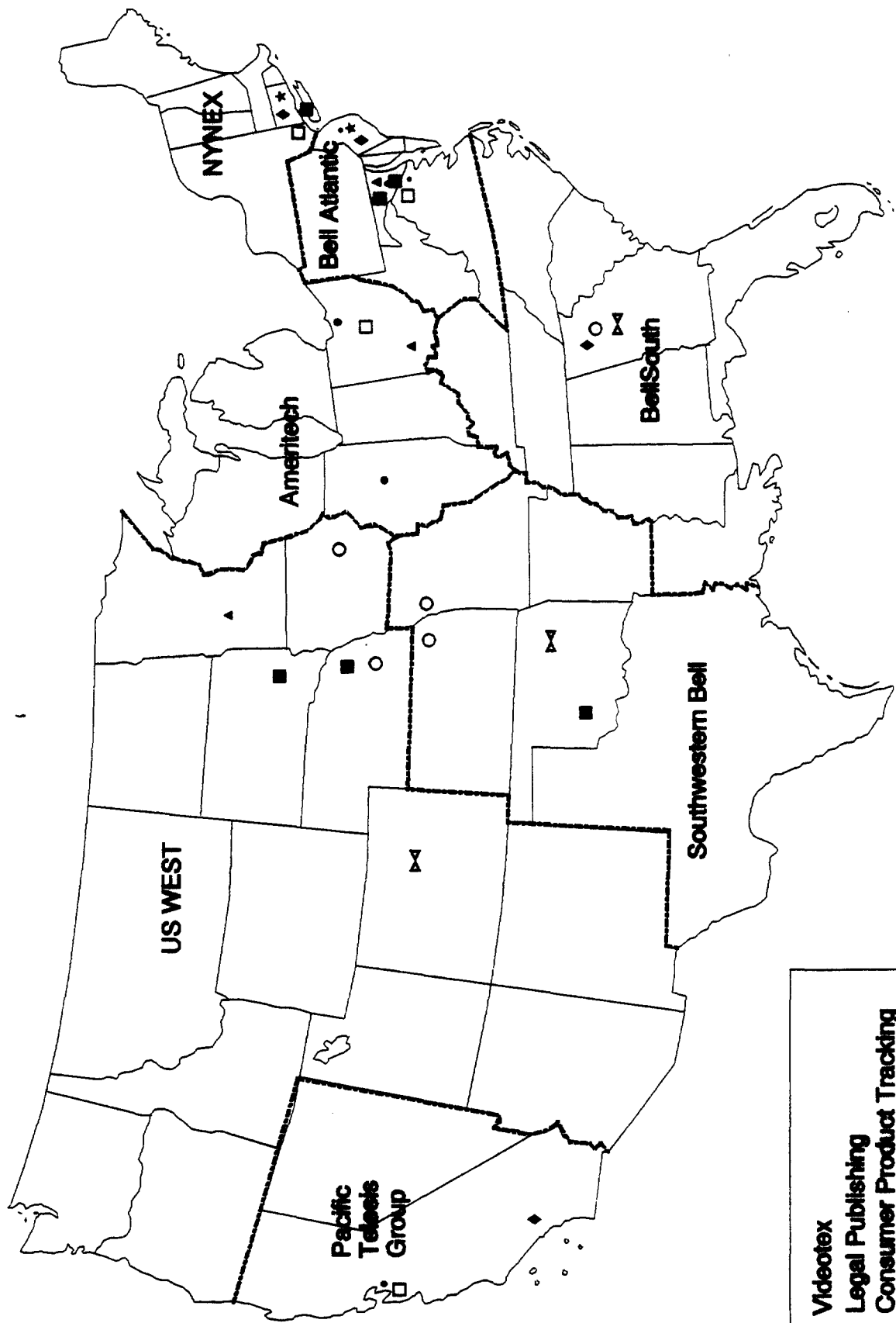
Suppose, by way of analogy, that Safeway were designated the "Supermarket of Last Resort" and were required to subsidize milk and bread from other receipts. This would not transform the supply of those two staples into a "natural monopoly." But it would channel all competition toward other goods. If one further postulates that sales of caviar and quiche generate 90 percent of all supermarket profits, the upshot is obvious. Safeway will jack up the price of those two luxury items. Caviar-and-quiche competitors will proliferate, and consultants will write lengthy papers explaining why the milk-and-bread market is a natural monopoly, and why Safeway should therefore be barred from selling anything else.

*Excess Capacity.* -- The AT&T/MCI Report misrepresents the role of alternative access technologies yet a third time, by ignoring the huge capacities of CAP networks. Precise figures are again impossible to obtain, but it is reasonable to estimate that no more than 10 percent of CAP fiber is currently in use carrying traffic. A CAP carrying 5 percent of access traffic from an urban business district could readily expand to 50 percent, with almost no additional investment. The AT&T/MCI Report says nothing about this at all.

This is an astonishing omission in a report sponsored in part by AT&T. In attempting to prove that AT&T itself faces intense competition in long-distance markets, AT&T has strongly emphasized the vast capacities of its competitors' networks -- and sharply down-played their market shares. In comments filed with the FCC in 1990, for example, AT&T argued that "the existence of this excess capacity [in competitors' networks] precludes the exercise of market power by any carrier -- including AT&T."<sup>26</sup> AT&T filed with the Commission an extensive report in support of its argument that the abundant capacity available to its competitors rendered AT&T

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<sup>26</sup>AT&T Comments at 30, Competition in the Interstate Interexchange Marketplace, No. 90-132, (F.C.C. July 3, 1990).



Map 1 Geographic Distribution of Central Processor Locations.

The difference between market power (significant or otherwise) confined to a single geographic area and multiple suppliers feeding a much larger national market seems obvious. The perils of ignoring it, as the AT&T/MCI Report does, can perhaps be illustrated one last time by considering the ninth Regional Bell Company, the one that serves twenty-seven million Canadians. To be sure, Canada has not yet joined the Union. But the North American telephone network is a fully interconnected, seamless whole, an integral element of the "overall production process" of North American telephony. Bell Canada may well have some market power in its home territory. Thus, if one is to believe the theory of the AT&T/MCI Report, Bell Canada should have no trouble taking over the long-distance market continent-wide. But that is nonsense, of course. Whatever market power Bell Canada may have in Ontario or Quebec cannot be leveraged into interexchange service in Texas or Florida. In telephony, under current market and regulatory conditions, market power "over at least one critical ('bottleneck') element" plainly does *not* entail market power over the "overall production process."

In sum, the central theory of the AT&T/MCI Report is simply wrong. Market power in a local or regional market does not entail market power in national markets.

### Local Access

The AT&T/MCI Report neglects to count the many bottles serving the national market; it also fails to count lots of necks. The Report begins its discussion of local competition with a pie chart that compares the access revenues of local telcos with those of Competitive Access Providers (CAPs).<sup>21</sup> This one pie chart is supposed to prove that within its own territory, each local telco absolutely controls 99 percent of local access.

*Traffic Volumes vs. Revenues.* -- Even if CAPs were the only competing providers of local exchange transport -- and they are not -- this pie chart would be gravely misleading. Telephone economics are defined by the 10/90 rule: 10 percent of business customers generate 90 percent of business revenues.<sup>22</sup> A small fraction of very large business customers accounts for a much larger fraction of long-distance traffic, and these large customers are typically concentrated in the downtown areas of major cities. In 1987, *The Geodesic Network* estimated that 0.1 percent of all interexchange customers accounts for about 15 percent of interexchange traffic

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<sup>21</sup>AT&T/MCI REPORT at 2, Figure 1.1.

<sup>22</sup>*Communications Options; The World Beyond AT&T*, COMPUTERWORLD, Dec. 30, 1985/Jan. 6, 1986, at 33. Pacific Bell states that "30% of our business revenue comes from the 0.5% of our serving territory located in or near the major downtown areas." Pacific Bell's Comments and Reply Comments in the Supplemental Rulemaking in the Opening Comments of Pacific Bell at 23, Nos. R. 93-04-003 and I. 93-04-002 (Cal. PUC Jan. 27, 1994). *But see*, WILLIAM BAUMOL AND J. GREGORY SIDAK, TOWARD COMPETITION IN LOCAL TELEPHONY 11 (1994). ("It is an industry rule of thumb that local exchange carriers obtain 80 percent of their total revenues from 20 percent of their customers....").

The text of the AT&T/MCI Report does not refer to GTE at all.<sup>12</sup> Unmentionable though it is, GTE does own and operate 16 million local access lines -- more than NYNEX, Southwestern Bell, Pacific Telesis, and U S West.<sup>13</sup> And GTE's market power in its local service areas has *not* proved to be "constant" at all in the "overall production process" of local and long-distance telephony. As discussed in detail below, this is now a matter of plain historical fact.

The AT&T/MCI Report is equally silent about the core business of the new Sprint -- the 6 million local exchange lines served by what used to be called United Telecom.<sup>14</sup> The new Sprint, like the old, is not successfully leveraging anything anywhere. Here again, market power in the new Sprint's local service areas has *not* turned out to be "constant" in the "overall production process" of local and long-distance telephony. Sprint is still running a distant third in the long-distance market. Nobody expects it to overtake or even approach AT&T any time soon.

Most information services are provided in national markets too. Prodigy, Sabre, Lexis, Dialog, Dow Jones and MCI, like virtually all other major information providers, advertise and sell standardized packages nationwide. As the Information Industry Association has informed the FCC, economics and technology compel on-line information service providers to serve very broad geographic markets.<sup>15</sup> "Enhanced services have been and should continue to be created to meet national needs," declared one major provider of on-line services.<sup>16</sup> No single city and few single LATAs can supply the critical mass of subscribers needed to make on-line information services affordable. To be economically viable, most on-line information services must therefore be situated toward the top of the telephone network. At their national head-

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<sup>12</sup>The only time "GTE" appears at all in the document is, first, in a footnote where an equipment manufacturing decision involving GTE is briefly described, (AT&T/MCI REPORT at 23 n.27) and second, in tables in the final appendix of the report that list revenues, customer lines and total assets of the RBOCs, GTE, Centel and Contel (AT&T/MCI REPORT at 241-243). These tables are, incidentally, more than two years out of date.

<sup>13</sup>USTA, PHONE FACTS 1993, at 21 (1993).

<sup>14</sup>This figure represents Sprint's 4.2 million local access lines plus Centel Corp.'s 1.6 million local access lines. USTA, PHONE FACTS 1993, at 21. Sprint acquired Centel in 1992. See J. Mulqueen, *Sprint & Centel Will Reach Three Markets*, COMMUNICATIONS WEEK, June 1, 1992, at A1.

<sup>15</sup>Comments of Information Industry Association at 13-15, Petition for Declaratory Ruling that States and the District of Columbia Are Preempted from Imposing Public Utility Regulation on Enhanced Services, No. DA 91-223 (FCC Apr. 8, 1991).

<sup>16</sup>Comments of GE Information Services in Support of Petition for Declaratory Ruling at 7, Petition for Declaratory Ruling that States and the District of Columbia Are Preempted From Imposing Entry and Exit Regulation and Tariff Requirements on Carrier Affiliated and Noncarrier Affiliated Enhanced Services Providers, No. DA 91-223 (FCC Apr. 8, 1991).

quarters, information service providers use dedicated links between their computers and an interexchange carrier or VAN. MAP 1.

Thus, if any fluidic metaphor applies in these markets, the appropriate one is not a bottleneck, but a funnel. The major rivers of demand needed to make on-line services affordable materialize only when these streams converge at the top of long-distance networks. No local carrier has any significant degree of control over what can be delivered to or from these national providers, or at what price.

The AT&T/MCI Report ignores this too. The Report is simply silent on the experience of information services -- where, as discussed above, the BOCs have competed head-to-head with GTE and Sprint in some measure since 1988, and fully since 1991. The Report is silent about this experience -- experience that, again, runs directly contrary to the Report's central thesis. Here too, market power in local service operations has *not* proved to be constant at all in the "overall production process" of on-line information services.

The difference between local and national markets was emphasized by the D.C. Circuit Court of Appeals in its major 1993 ruling on information services. The Court pointed out that no single RBOC can control access to any national information services market,<sup>17</sup> not even a market that relies exclusively on telephone access. In such markets, an RBOC is simply "unable to discriminate against competing providers."<sup>18</sup> At the provider's end, discrimination is prevented because large providers "not only can but already do bypass the BOCs by constructing private networks;" even where bypass is not feasible providers can exploit competition "between BOCs and between BOCs and non-BOC telephone companies, by moving or threatening to move their distribution facilities \* \* \* to a different region or to an independent company within the BOC's region."<sup>19</sup> On the customer side, as the D.C. Circuit pointed out, it is all but impossible for local telcos to distinguish between one kind of telephone user and another, making targeted discrimination against any one them infeasible.<sup>20</sup>

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<sup>17</sup>United States v. Western Elec. Co., 993 F.2d 1572, 1579 (D.C. Cir. 1993).

<sup>18</sup>*Id.* at 1578.

<sup>19</sup>*Id.* at 1579.

<sup>20</sup>*Id.* at 1578. The court explained that "a BOC would not only have to distinguish between voice and data messages, but also between those data messages coming from a competitor and those from a noncompetitor." *Id.* at 1579.

AT&T has agreed: the long-distance market is served by "national-based" carriers;<sup>8</sup> it is an "uncontroverted fact[]" that the interexchange services market is a national one."<sup>9</sup> In filings with Judge Greene MCI has written: "The Department of Justice, this Court, and the FCC ha[ve] all concluded that InterLATA services are offered in a single nationwide market."<sup>10</sup>

Each RBOC supplies that "single, nationwide market" with no more than about 10 percent of local access; the rest is supplied by other RBOCs, GTE and other independent telcos. Similarly, no individual RBOC accounts for more than about 10 percent of purchases in the domestic market for telecommunications equipment. In these markets, power is concentrated in the hands of a small number of dominant manufacturers, led by AT&T. For these markets, then, there is no bottleneck. The most that the authors of the AT&T/MCI Report could say here is that these markets are vulnerable to eight or nine "bottles-necks." But in antitrust discourse, a plural provokes much less anxiety than a singular. **FIGURE 1.**

The AT&T/MCI Report attempts to keep the vocabulary singular by appealing to theory. Without citing any sources, the Report simply announces: "A basic principle of economic theory holds that the amount of monopoly power that a monopolist may exercise in a market is essentially a constant, so long as the monopolist retains monopoly control over at least one critical ('bottleneck') element of the overall production process."<sup>11</sup> This theory, whomever's it may be, has been tested in the telephone industry. It has been proven wrong.

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<sup>8</sup>AT&T and McCaw's Opposition to Petitions to Deny and Reply to Comments at 45, In the Matter of American Telephone and Telegraph and McCaw Cellular Communications, Inc. Applications for Consent to Transfer of Control of Radio Licenses, No. DA 93-1119 (Dec. 2, 1993).

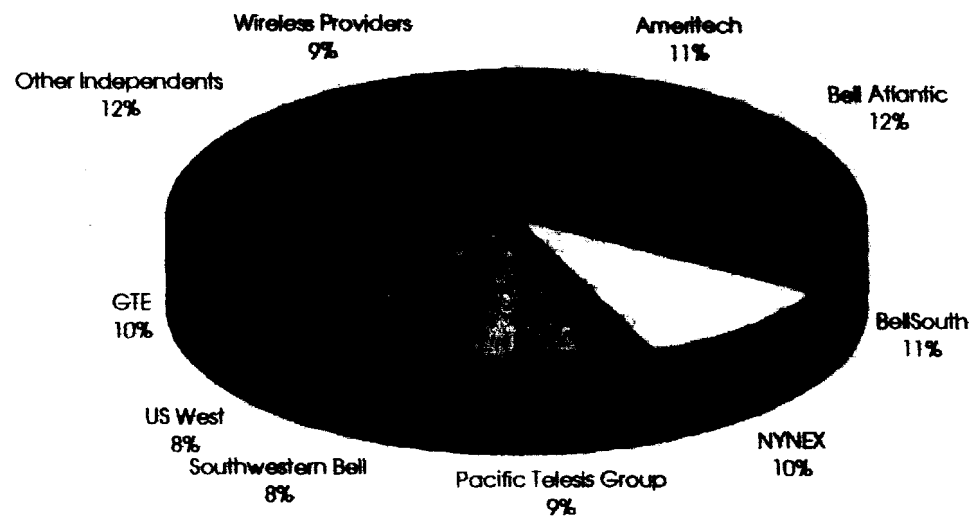
<sup>9</sup>AT&T's Reply Comments on the Report and Recommendations of the United States at 46, United States v. Western Elec. Co., No. 82-0192, (May 22, 1987).

<sup>10</sup>MCI's Response to Recommendation Concerning Line of Business Restrictions and Related Procedures at 34 (footnote omitted), United States v. Western Elec. Co., No. 82-0192, (Mar. 13, 1987).

<sup>11</sup>AT&T/MCI REPORT at 33.

**Figure 1**

**Local Access Line Shares**



Sources: USTA, Phone Facts 1993, at 20-21; L. Cauley, Tied to the Past? The Baby Bells Have Based Much of Their Business on Wired Services; Now What Do They Do?, Wall St. J., Feb. 11, 1994, R20. Note: There is some double counting due to BOC provision of wireless.

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